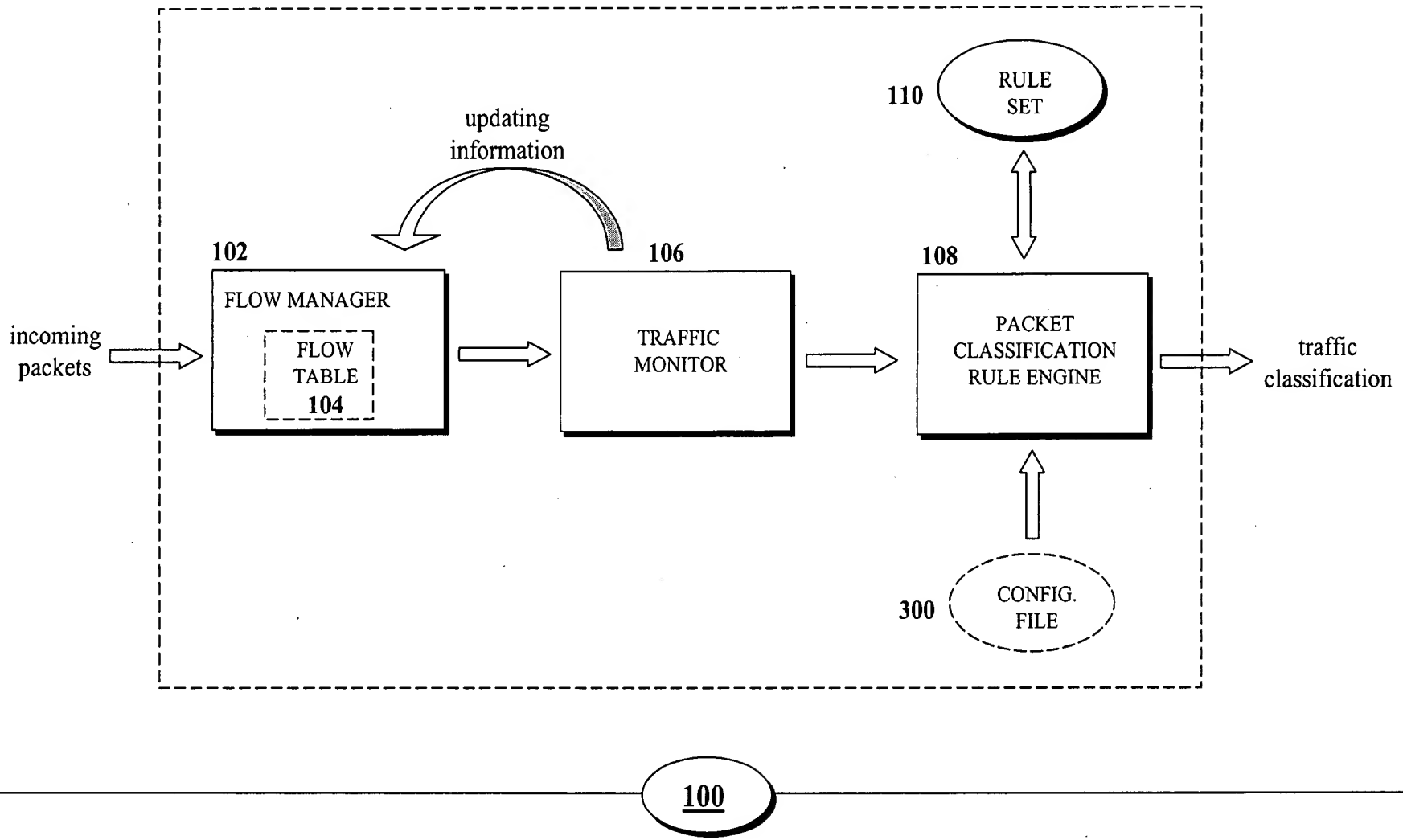


FIG. 1A

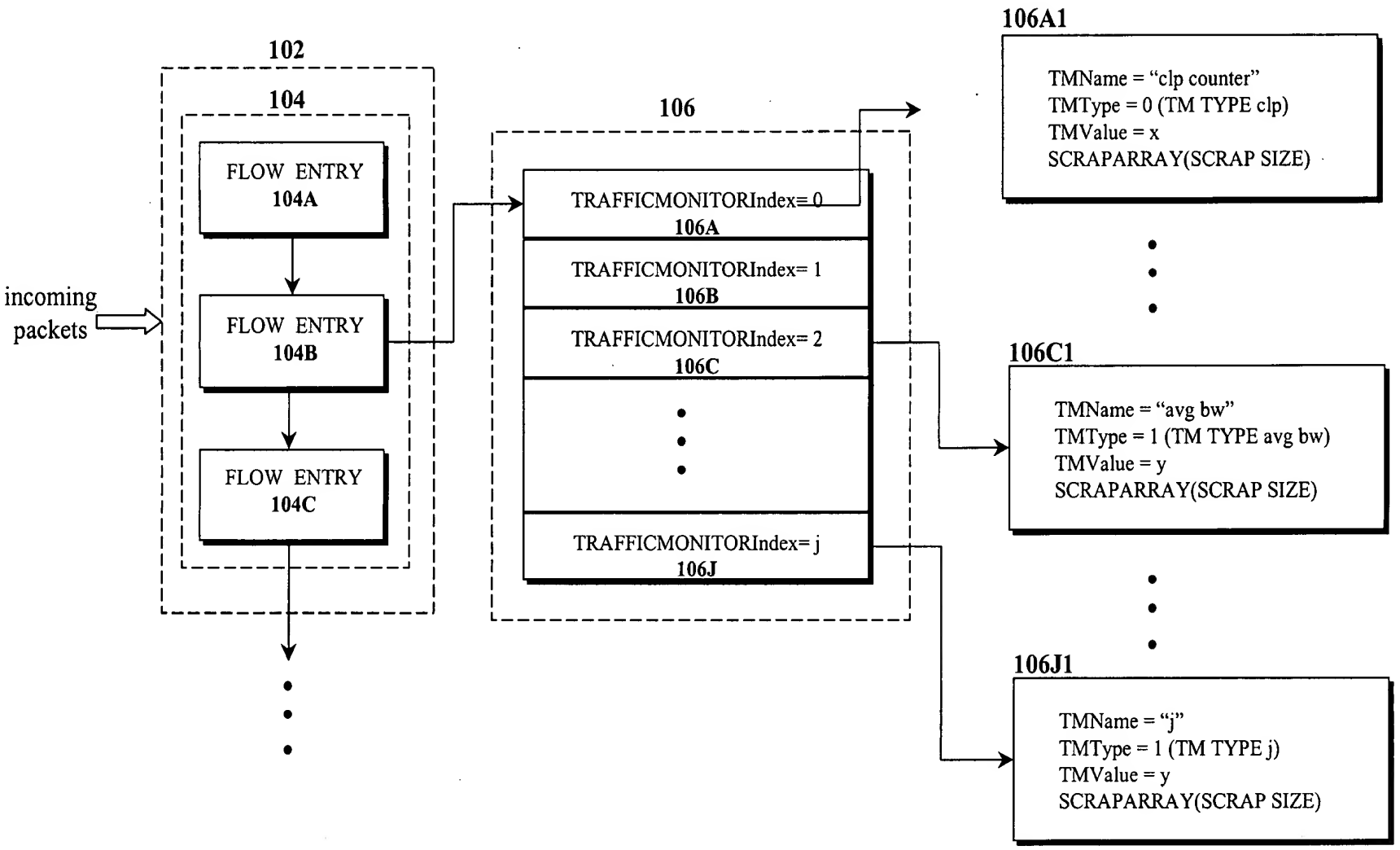
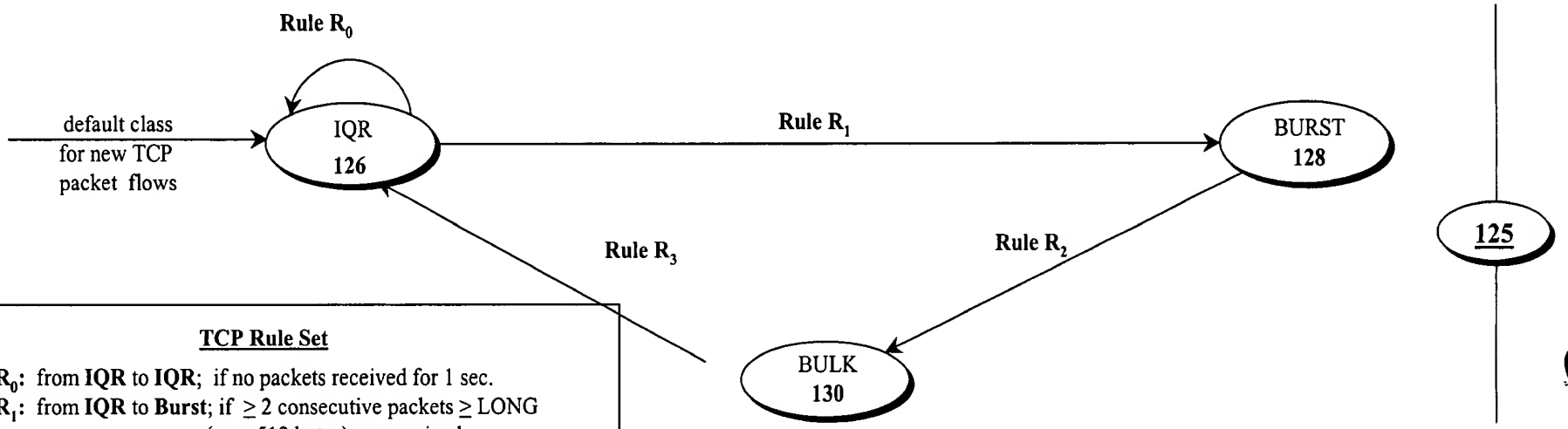


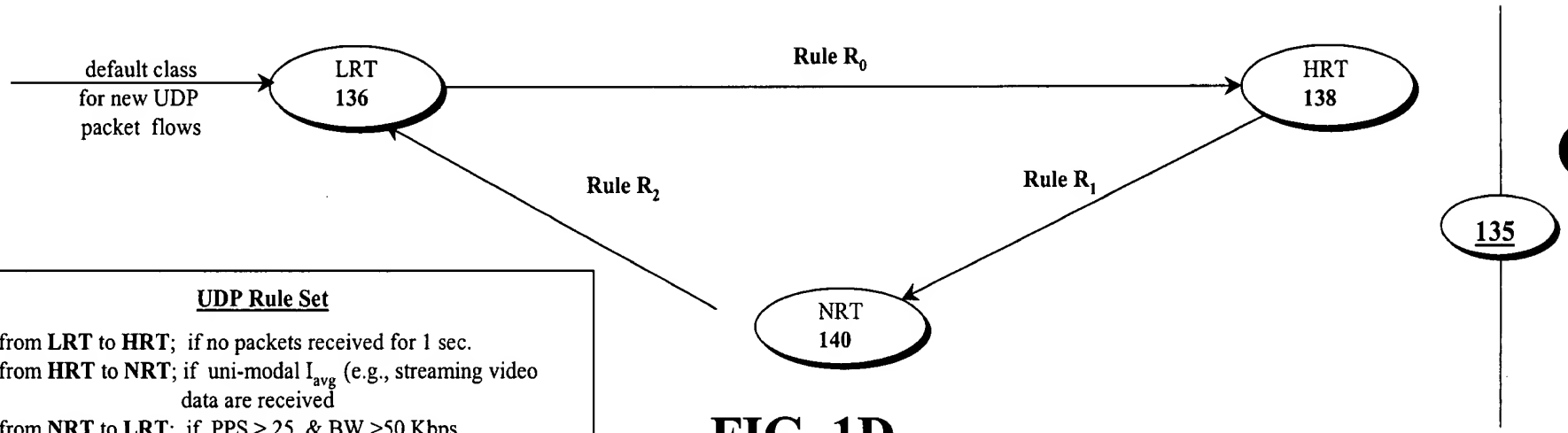
FIG. 1B



TCP Rule Set

- **R_0:** from **IQR** to **IQR**; if no packets received for 1 sec.
- **R_1:** from **IQR** to **Burst**; if ≥ 2 consecutive packets ≥ LONG (e.g., 512 bytes) are received
- **R_2:** from **Burst** to **Bulk**; if ≥ 10 consecutive packets ≥ LONG (e.g., 512 bytes) are received
- **R_3:** from **Bulk** to **IQR**; if no packets received for 1 sec.

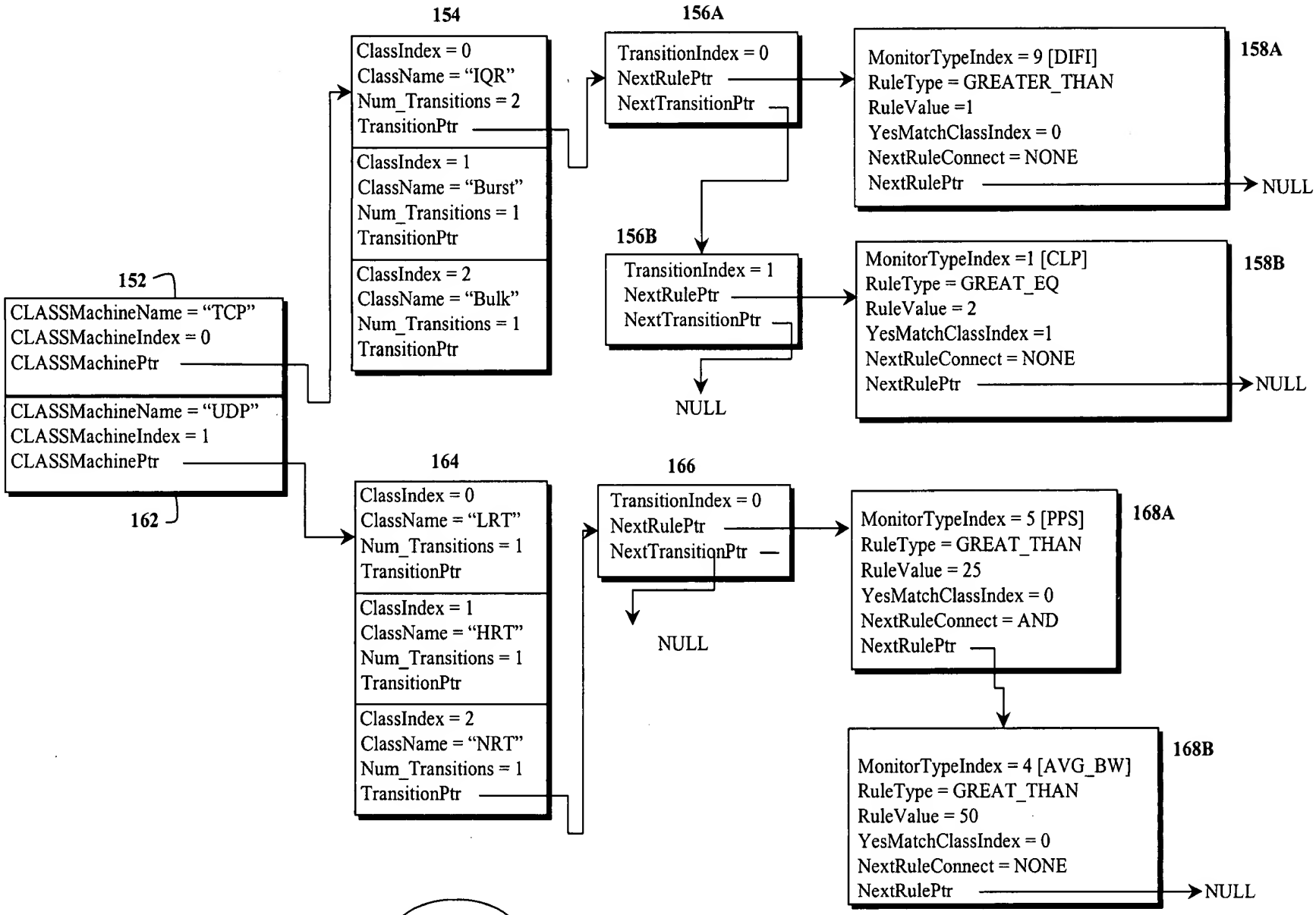
FIG. 1C



UDP Rule Set

- **R_0:** from **LRT** to **HRT**; if no packets received for 1 sec.
- **R_1:** from **HRT** to **NRT**; if uni-modal I_{avg} (e.g., streaming video data are received
- **R_2:** from **NRT** to **LRT**; if PPS > 25 & BW >50 Kbps are received

FIG. 1D



150

FIG. 1E

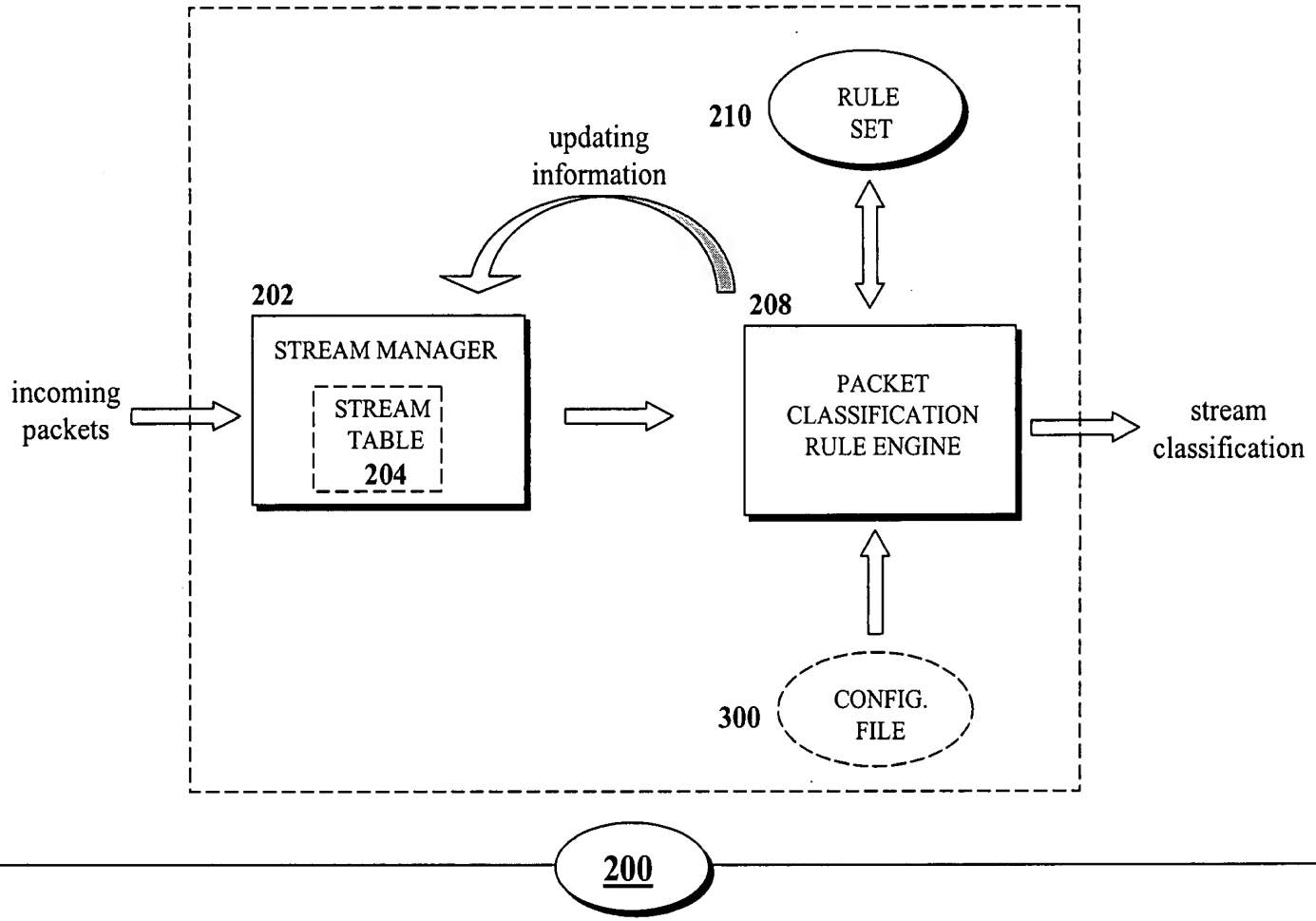


FIG. 2A

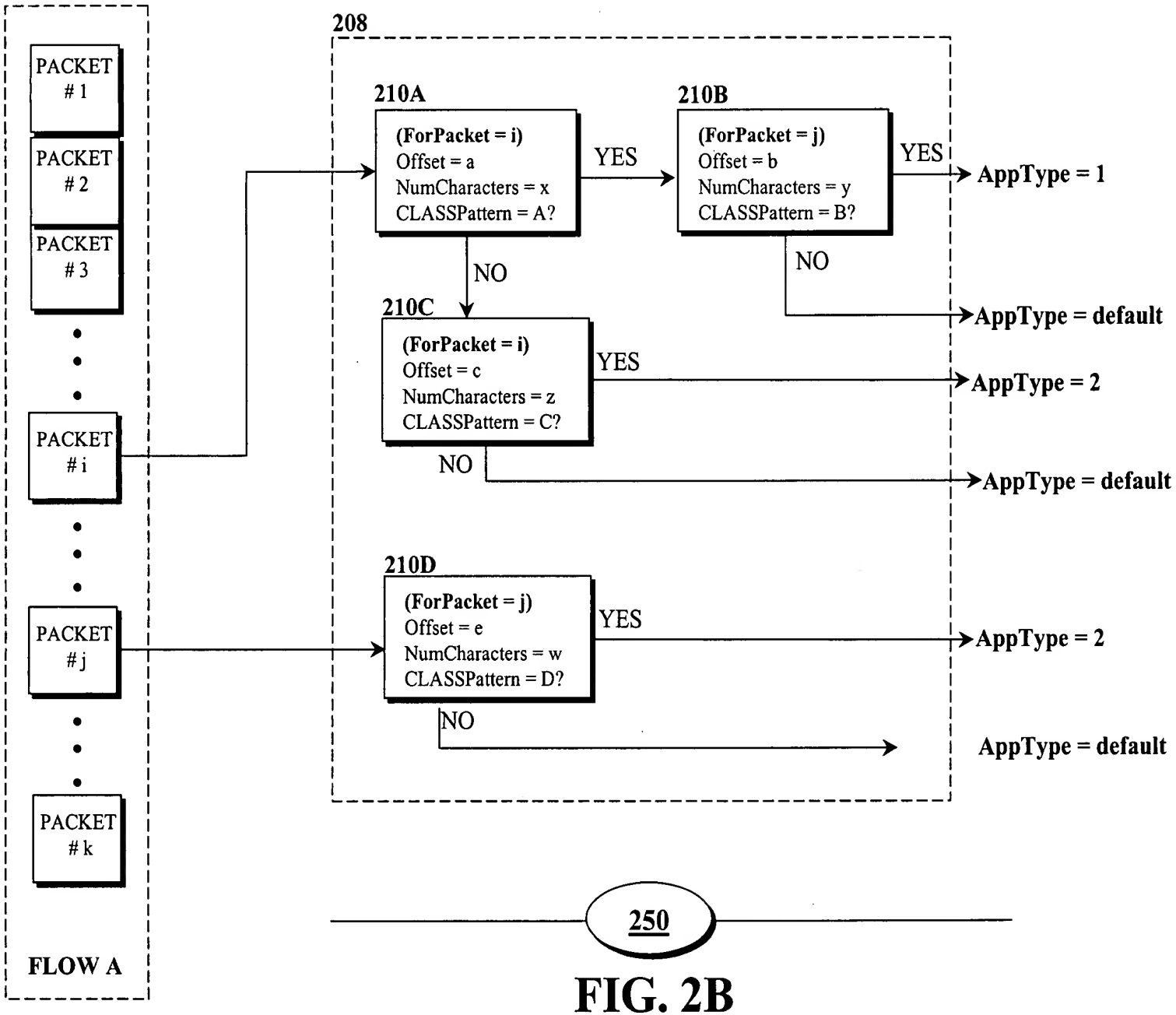

208
PACKET #1
PACKET #2
PACKET #3
PACKET #i
PACKET #j
PACKET #k
FLOW A
210A
(ForPacket = i)
Offset = a
NumCharacters = x
CLASSPattern = A?
YES
210B
(ForPacket = j)
Offset = b
NumCharacters = y
CLASSPattern = B?
YES
AppType = 1
NO
AppType = default
210C
(ForPacket = i)
Offset = c
NumCharacters = z
CLASSPattern = C?
YES
AppType = 2
NO
AppType = default
210D
(ForPacket = j)
Offset = e
NumCharacters = w
CLASSPattern = D?
YES
AppType = 2
NO
AppType = default
250

FIG. 2B

CLASSIFICATION RULE ENGINE CONFIGURATION FILE

```
#Set the bps for port 1 to 10Mbps and port 2 to 5Mbps
bandwidth 1 10000000;
bandwidth 2 5000000;

#Enable the static Layer-7 classifier by default; Can change to Dynamic Classifier by changing the setting to policy dynamic
policy static;

# Define 2 classes of Traffic
class high;
class low;

# These two queues use a bounded strict priority scheduler in which# the high priority queue can consume 70%  of available bandwidth and# the low #priority queue can consume all remaining bandwidth.  The# low priority queue is the default queue.
scheduler bsp {
  queue high 70;
  queue low 100 default;
}

# MBase Application:  UDP, high priority class
application mbase 17 high;

# Search first 10 bytes of first packet for pattern
appRule mbase 1 pattern "meDIabASe" 0 10;

# Dynamic Classifier Rules – Transition from High to Low Priority Class
dynamicRule high low OR NOT belowThresh 85;
dynamicRule high low OR belowThresh 93;

# Dynamic Classifier Rules – Transition from Low to High Priority Class
dynamicRule low high OR belowThresh 85;
dynamicRule low high AND NOT belowThresh 93;
```

300

FIG. 3